THE INSTITUTE OF PHYSICS
47 BELGRAVE SQUARE, LONDON, S.W.1

BULLETIN

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CONTRIBUTIONS FROM MEMBERS

On Interviewing Juniors

What gave you the idea that you would like to be an assistant in a research laboratory? is one of the questions which I usually find useful as an opening. If the applicant is very shy, I get her (or him) to write her name and address in full at the top of the sheet of paper on which I am going to make my notes about her; the accomplishment of this simple task may reassure her.

The completion of a form with details of education and experience, a job which takes some applicants fifteen minutes, is usually left till the end of the interview since it may be omitted if the applicant is evidently useless. I have usually made up my mind from the letter of application what tendencies the applicant has, and my next questions are directed to confirming or correcting the first impressions. We are usually influenced by handwriting to some extent, and it is worth while to read a few books on the interpretation of handwriting to find out how much, and how little, one is justified in deducing from written evidence of character. For laboratory work the layout of the letter rather than the writing itself is the main indication; the habit of untidiness cannot be concealed even by using a typewriter, as you would know if you had seen the typescript of this article.

Of a girl I do not ask much about her school work, but switch soon to her home hobbies; does she cook, knit, make her own clothes? Does she belong to any club or youth group? This often leads to a short general conversation which may allay shyness. Of a boy I ask whether he belongs to any clubs or scouts, and what sports he plays. Then does he make models; if aero-models, do they fly? Does he ride a bicycle? Does he mend it himself? Has he ever mended a 3-speed gear? Will he please draw a diagram of a cycle?—not an artist's drawing but a simple diagram. Watching this test, upside-down of course, is one of the main tests of the interview. Does he draw the frame first, or the wheels? Does he insert irrelevant details? Does he draw the cycle in profile and the handlebars in plan? Does he omit the strut inside the chain? This error, common in girls, indicates lack of the most rudimentary engineering sense; if he makes it I ask "What would happen to the back wheel if the chain broke?" to find out whether he realizes that the strut is a tension member of the frame. I never have male applicants who do not ride cycles, and from a few years' collection of drawings I have learnt how much one can learn from this simple test.

Then, since he has been sitting still for a while, I usually take him for a walk round the laboratory to see the sort of work which is being done, and the workshops, and on the way I ask him to use a simple coarse balance of the multi-beam type with sliding weights, to weigh a bit of metal, and write down the weight. The balance selected is an unusual type so as to be unfamiliar to all the applicants, and again I have learnt what points in their fumblings are significant. I even ask them to write down their result, to see if they know where to put the decimal point, and have the sense to add a unit (grams) to make it mean something.

Tests of mental arithmetic are considered rather cruel, but I ask them what is 5% of £150? and if the first answer is wrong, as it usually is for anyone under 17, I ask them to think it over and try again. A chap who cannot work this out in his head in two tries is likely to be annoyingly slow in mental arithmetic, and I have suffered from assistants who were "number blind" sufficiently long to want to try to eliminate them at once. The usual answers range from thirty shillings to thirty pounds.

Coming back to my desk I make a few notes, ask them if they have any questions, and try to place them in their own families. I can nearly always spot an only child, and often the eldest of several; the effort of trying to size up the family position is good for my imagination. Then by leading questions such as "You haven't any older sisters, have you?" I check the true position. I hope that this almost unnecessary part of the interview serves to bring home to the applicant that I am interested in and studying him, not just trying to find the ideal assistant for my own sake.

After the full application form has been filled up come the question of continuing his studies, what sort of evening course would he like to take, has he ever thought of working for a National Certificate or degree; we will give him a day off a week but expect him to supplement that with evening work; it may effect his deferment. That part varies, but is usually left until I am fairly certain that the applicant will do, since otherwise it would be a waste of time.

Of course, the best qualification for interviewing juniors is several years' experience, and an analysis of one's own failures. These suggestions are only offered to guide beginners who are trying to minimize the failures in their first few years. If you can get someone else to do this work for you, let him; but do not accept his nominations unconfirmed by some interview of your own.

E. VAN SOMEREN.

NOTICES TO MEMBERS

Forthcoming Conferences, Summer Schools and Exhibitions

Further particulars of the following meetings, together with forms of application to attend, may be obtained from the Deputy Secretary of the Institute unless otherwise indicated.

Education Group.—The Annual Group Conference will be held at the Institute's House on 5th, 6th and 7th April. Among the speakers are Professor F. A. Vick, Dr. R. S. Silver, Mr. F. Sherwood Taylor, Mr. S. R. Humby, Mr. J. Trenaman and Dr. J. Goodier. In addition a public lecture will be given by Professor A. M. Tyndall, F.R.S.

X-Ray Analysis Group.—The Spring Conference is to be held on 12th and 13th April at Ashorne Hill, Leamington Spa. The subject of the Conference is "Metals."

University of Leeds.—A postgraduate Summer School on optical crystallographic methods is to be held from 3rd to 14th September in the Department of Inorganic and Physical Chemistry. The course will provide basic training (mainly by practical work) in the use of the polarizing microscope in the study of crystals and other birefringent materials. The last date for application to attend is 11th May; full particulars and forms of application may be obtained from Miss M. Spink, Assistant to the Director of Extra-Mural Studies, The University, Leeds, 2.

University of Bristol (in co-operation with the Institute).—A Summer School on the Physics of Solids will be held in the H. H. Wills Physical Laboratory from 6th to 15th September. It is intended mainly for research students at universities and for members of staffs of Government and industrial laboratories who wish to familiarize themselves with the theoretical aspects of subjects with which they are concerned on the experimental side. There will be three courses, (*a*) Electron Theory of Metals (6th–8th September), (*b*) Theory of the Mechanical Properties of Metals (10th–12th September), and (*c*) Macroscopic Theory of Plastic Deformations in Metals (13th–15th September). Students may apply for enrolment for any or all of the courses. Numbers are limited and the last date for application is 1st July.

University of Liverpool (in co-operation with the Institute and with the support of the British Electrical and Allied Industries Research Association).—A Summer School on the Theory of Dielectrics will be held on 19th to 21st July. The School will be followed by a Conference on Dielectrics from 23rd to 25th July with papers covering theoretical and experimental aspects. The speakers include Dr. L. Hartshorn, Professor J. G. Kirkwood, Dr. M. Magat, Professor C. P. Smyth, Dr. S. Whitehead and Professor H. Fröhlich.

Instrument Industry's Exhibition.—The Scientific Instrument Manufacturers' Association of Great Britain Ltd. (S.I.M.A.) announce that the first British Instrument Industry's Exhibition to be held will take place in the National Hall, Olympia, London, from 4–14 July, 1951. This important exhibition will, we understand, occupy some 50 000 sq. ft. The exhibition is also supported by the British Industrial Measuring and Control Apparatus Manufacturers' Association, the British Electrical and Allied Manufacturers' Association (Instruments Section), the British Lampblowing and Scientific Glassware Manufacturers' Association and the Drawing Office Material Manufacturers' and Dealers' Association, Ltd. It is hoped that a section of the exhibition will be occupied by users of the instruments exhibited.

World Metallurgical Congress.—A world Metallurgical Congress (Director General, Dr. Zay Jeffries) is to be held in Detroit, U.S.A., from 15 to 19 October, 1951, under the auspices of the American Society for Metals. Details may be obtained from the Society at 7301 Euclid Avenue, Cleveland 3, Ohio, U.S.A.

Physical Society Exhibition.—The 35th Annual Exhibition of Scientific Instruments and Apparatus arranged by the Physical Society will be held in London from 6th to 11th April. It will again be in the Royal College of Science. Further details, handbooks and tickets should be obtained from the Secretary–Editor of the Society at 1 Lowther Gardens, Prince Consort Road, London, S.W.7.

Honours Degree in Applied Physics

Members may be interested to learn that the Senatus Academicus and the University Court of St. Andrews University have approved a new honours degree in the Faculty of Science, the course for which will combine the work for the Ordinary Degree in Mathematics and Natural Philosophy with the third and fourth (honours) year courses in Electrical Engineering.

This combination of subjects is designated "Applied Physics," and the purpose of the course is to produce engineer-scientists in the field of radio and electronics.

Erratum

The article by Professor Stratton on The International Council of Scientific Unions in the January *Bulletin* referred to colloquia on cosmic rays in Glasgow, October 1947 and December 1951. This should have read "Cracow in October 1947 and Bombay December 1950."

"*Reading maketh a full man, conference a ready man and writing an exact man.*"

FRANCIS BACON.

NEWS OF MEMBERS

The New Year Honours List contained the following awards to Members:

O.B.E.

Fellow—W. Hume-Rothery.
Associates—A. E. Evans, E. A. Lovell.

Fellows

Prof. G. V. Raynor has been awarded the Walter Rosenhain Medal by the Institute of Metals.

The following professional appointments have been notified:

A. R. Lee—Deputy Director, Road Research Laboratory, Department of Scientific and Industrial Research.
C. N. Watson-Munro—Professor of Physics, Victoria University College, Wellington, New Zealand.
L. Rotherham—Ministry of Supply, Division of Atomic Energy (P), Risley, Warrington, Lancs.
C. Spencer White—Engineer I, Directorate of Communications Development, Ministry of Supply.

Associates

The following professional appointments have been notified:

J. B. Bain—Assistant Director of Education, Roxburgh.
R. P. Hudson—Assistant Professor of Physics, Purdue University, Indiana.
T. K. Jones—Research Department, William Jessop and Sons Ltd., Rotherham, Yorks.
L. E. Mussell—The Liverpool Radium Institute.
R. Oliver—Physicist, Radiotherapy Department, Churchill Hospital, Oxford.
H. S. Sowery—Senior Physics Master, George Heriot's School, Edinburgh.
F. Stern—Research Assistant, Department of Physics, University College, Dundee.

Graduates

The following professional appointments have been notified:

B. Birtwistle—Junior Engineer, Meter-Servo Laboratory, Metropolitan-Vickers Co. Ltd., Trafford Park, Manchester.
E. L. Garrett—Assistant Geophysicist, Anglo-Iranian Oil Co. Ltd., London.
T. A. Mitchell—Scientific Officer, Admiralty Signal and Radar Establishment, Haslemere, Surrey.
B. Roberts—Research Laboratories, Elliott Brothers (London) Ltd., Borehamwood, Herts.

APPOINTMENTS VACANT

The inclusion of particulars of a vacancy must not be taken to imply that the Institute necessarily approves of the terms offered or that might be offered. Candidates should satisfy themselves that these are satisfactory, and they may always refer to the Institute for advice.

Vacancies exist for personnel in the following categories with the Research and Armament Division of the **Fairey Aviation Co. Ltd.**

(1) **Servomechanism Engineers**—Graduate or post-graduate engineers with experience in automatic control, stability analysis and servomechanism theory and practice.
(2) **Research Assistants**—Graduate or H.N.C. engineers with experience in pneumatic, hydraulic and/or electric control mechanisms, electronic devices and/or telemetry.

Both senior and junior personnel are required. Apply, in the first instance, giving full particulars of age, education and experience to: Personnel Manager, The Fairey Aviation Co. Ltd., Hayes, Middlesex, quoting Ref. R.D./I.P.

The Council of **King's College, Newcastle-upon-Tyne,** invite applications for a **Lectureship in Physics**; duties to commence October 1, 1951.

The commencing salary will be fixed at a point on the scale £650 × £50 to £1 100 in accordance with the qualifications and experience of the successful applicant. Family allowance and F.S.S.U.

Twelve copies of application, together with the names of three persons to whom reference may be made, should be submitted not later than March 17, 1951 to G. R. Hanson, Registrar of King's College, from whom further particulars may be obtained.

Monsanto Chemicals Limited have several vacancies for **Physicists** in their Research Department at Ruabon.

The vacant positions are in the Exploratory Section and are for work on (*a*) the physical aspects of surface active agents, (*b*) friction and lubrication problems and (*c*) standard physical measurements, mostly with regard to electrical insulating materials.

Qualifications required are a good Honours Degree and preferably some research experience.

Applications giving age, qualifications and experience should be sent to: The Chief Personnel Officer, Monsanto Chemicals Ltd., 8 Waterloo Place, London, S.W.1.

Glass blower required for research in vacuum physics. Salary in the range £450–£600 starting at a point depending on qualifications and rising to maximum by increments of £25. Persons interested are asked to write directly to Professor K. G. Emeleus, Physics Department, Queen's University, Belfast.

Imperial Chemical Industries Limited, Novel Division, invites applications from **Physicists** for a number of vacancies in its Research Department at Stevenston, Ayrshire. The work may consist in experimental and theoretical studies of explosive reactions involving the use of high-speed photographic and electronic techniques, or in the development and application of physical instruments and methods to Research and Industrial problems. Applicants should possess a good Honours Degree in Physics, should have some research experience and should not exceed 28 years of age. The initial salary will depend upon age and experience. Applications should be made to the Staff Manager, Nobel House, 25 Bothwell Street, Glasgow, C.2.

Research Vacancies exist in an engineering firm engaged on the development of high vacuum equipment and research into vacuum techniques and processes. Applicants, one of whom will be required for vacuum coating investigations, should be between 21–24 years of age and qualified up to Inter B.Sc. in Physics or Engineering Physics. Experience in high vacuum techniques valuable, but not essential. Progressive superannuated positions with opportunities for continued study. Full details to **W. Edwards and Co. (London) Ltd.,** Worsley Bridge Road; Lower Sydenham, London, S.E.26.

A vacancy exists at the Research and Development Department of **The Distillers Company Ltd.,** Epsom, Surrey, for a physicist to apply and develop infra-red spectroscopic methods in the analysis and identification of organic compounds. Applicants, aged under 27 years, should possess a University degree, and preferably have had up to two years' experience of this work. Commencing salary will depend on qualifications and experience. Non-contributory pension scheme. Apply to the Staff Manager, 21 St. James's Square, S.W.1.

Research Engineers or Engineer Physicists are required by an important steam and gas turbine organization for experimental and theoretical work on the following subjects:—

(*a*) Aerodynamics and Heat Transfer.
(*b*) Full Scale Testing of Turbine Machinery.
(*c*) Gearing Research and Development.
(*d*) Vibration Problems.
(*e*) Photo-elastic Stress Analysis.

They should possess an honours degree or equivalent in engineering or allied subjects. Age 23–28. Salary according to age and experience. Apply Box No. A.V.11. The Institute of Physics, 47 Belgrave Square, London, S.W.1.

Electronic Tubes Ltd. require **Physicist** or **Engineer** to carry out valve design and development. Previous experience in such work is necessary and additional qualifications such as diplomas or degrees are desirable. It is intended that the post should be filled by a man able to carry responsibility. The salary is in the range up to £800 per annum according to experience and qualifications. Application should be made to the Personnel Officer, Electronic Tubes Ltd., Loudwater, High Wycombe, Bucks.

Ministry of Supply invites applications from **Physicists** for unestablished appointments as **Experimental** or **Assistant Experimental Officers** in a Research Establishment near London for experimental work with radioactive materials, including radiation measurements for health physics, also instrument construction, calibration and maintenance.

Candidates should have at least Higher School Certificate or equivalent. Higher qualifications would be an advantage, and experience in the field of radiology is desirable, particularly for the E.O. grade, candidates for which should be at least 28 years of age. Salary according to age, qualifications and experience within ranges of: Experimental Officer, £525–£675; Assistant Experimental Officer, £230–£490.

Rates for women somewhat lower. Application forms obtainable from Ministry of Labour and National Service Technical and Scientific Register (K), York House, Kingsway, W.C.2, quoting A.28/51A. Closing date *March* 24, 1951.

Ministry of Supply invites applications from **Physicists** for unestablished appointments as **Senior Scientific Officers** or **Scientific Officers** in a Research Establishment near London for the handling and measurement of radioactive materials.

Candidates should have a 1st or 2nd class honours degree in Physics and preferably have had experience in designing electronic equipment and d.c. amplifiers. For S.S.O. appointments candidates must be at least 26 years of age and have had at least three years post-graduate research experience.

Salary according to age, date of graduation, and experience within ranges: Senior Scientific Officer, £700–£900; Scientific Officer, £400–650. Posts carry F.S.S.U. benefits. Rates for women somewhat lower.

Application forms obtainable from Ministry of Labour and National Service Technical and Scientific Register (K), York House, Kingsway, W.C.2, quoting A.27/51A. Closing date *March* 24, 1951.

The **De Havilland Aircraft Co. Ltd.**, Stag Lane, Edgware, have vacancies in the Central Laboratory for **Physicists** for expanding department on research and development of creep and fatigue testing in connexion with airframe and aero engine materials. Permanent position and good prospects. Apply in writing to Personnel Officer, Stag Lane, Edgware, Middlesex, stating age, qualifications, experience in detail and salary required.

Kelvin and Hughes Ltd. have a vacancy for a **Physicist** in the Research and Development Department of their Basingstoke Works. Candidates should have 1st or 2nd class honours degree in Physics and experience of research and development work. Knowledge of aircraft or similar instrument work an advantage, but not essential. Substantial salary to right man. Superannuation scheme available. Apply giving full details, etc., to Personnel Manager, Kelvin and Hughes Ltd., Winchester Road, Basingstoke, Hants.

Physicist required for X-ray and electron diffraction work, mainly on inorganic materials. Salary according to qualifications and experience. Apply, giving full details to: The Personnel Manager, Standard Telecommunication Laboratories Ltd., Progress Way, Enfield, Middlesex.

An assistant **Engineer** or **Physicist** required for work on the design of specialised testing equipment for measurements on dielectrics, magnetic materials, semi-conductors, rectifiers, crystals, etc. Applicants must be of Higher National to degree standard. Some experience in equipment design preferred but not essential. Apply, giving full details to: The Personnel Manager, Standard Telecommunication Laboratories Ltd., Progress Way, Enfield, Middlesex.

University of Leeds. Technician wanted in May or earlier by arrangement, in the **Plant Biophysics Research Laboratory** to service and maintain X-ray generators, electron-microscope and other instruments involving electronic apparatus. Previous experience in electronics essential; experience in high vacuum technique desirable but not essential, and supplementary training will be given. Age preferably between 28 and 35; salary according to age and experience. Applications giving the names of two referees should be sent to Dr. R. D. Preston, Biophysics Subdepartment, Botany Department, not later than *March* 15*th*.

Graduate Physicist (preferably female) required in the Research Laboratories of **The British Aluminium Co. Ltd.**, Chalfont Park, Gerrards Cross, Bucks. Applicants should have a good general education in classical physics and be prepared to carry out research on physical properties and also undertake and supervise the testing of physical properties of light alloys. Salary in accordance with qualifications and experience in the range of £450 to £550. Full particulars should be sent to the Director of Research at the above address.

Research and Development Department, United Steel Cos., Ltd., Stocksbridge, near Sheffield, have a vacancy in the X-ray section for a graduate with honours in Physics, Metallurgy or Chemistry. Previous research experience, particularly in some branch of X-ray crystallography, would be an advantage. Salary according to age, qualifications and experience.

DIARY OF INSTITUTE MEETINGS

Members may bring guests to any of the meetings listed below unless otherwise indicated. Individual notification has been or will be sent to the members of the Branch or Group concerned. Other members of the Institute may obtain further particulars from the Secretary of the Institute.

SPECIAL NOTE.—The South Wales Branch meeting originally arranged for March 10th has been postponed until March 17th. The X-ray Analysis Group Conference will be held on April 12th and 13th, and not on April 13th and 14th as previously announced.

Tuesday, March 13th (Electronics Group), at 5.20 p.m., at the Institute's House, 47 Belgrave Square, London, S.W.1. Annual General Meeting followed at 5.30 p.m. by **Dr. D. Gabor, F.Inst.P.** (Imperial College of Science and Technology). **"Plasma Oscillations."**

Wednesday, March 14th, (London and Home Counties Branch), at 5.30 p.m., at the Institute's House, 47 Belgrave Square, London, S.W.1. **Professor L. F. Bates, F.Inst.P., F.R.S. "Modern Theories of Magnetism."**

Friday, March 16th (Industrial Radiology Group), at 6.30 p.m., at the Institute's House, 47 Belgrave Square, London, S.W.1. **Mr. H. S. Peiser, A.Inst.P.** (Hadfield Ltd.). **"The Physics of Radiography."**

Friday, March 16th (Manchester and District Branch), at 7.0 p.m. in the New Physics Theatre, Manchester University. **Dr. H. K. Henisch, A.Inst.P.** (Reading University). **"Crystal Valves."**

Saturday, March 17th (South Wales Branch), at 2.30 p.m. at the University College, Cardiff. Discussion on **"Physics in School Education."**

Thursday, Friday, Saturday, April 5th, 6th, 7th (Education Group), **Conference.** Full particulars are available on request.

Thursday, Friday, April 12th, 13th (X-Ray Analysis Group), **Conference** at Ashmorne Hill, Leamington Spa. Full particulars are available on request.

Friday, May 4th (South Wales Branch), at 8.0 p.m., at the University College, Aberystwyth. **Professor P. B. Moon, F.R.S. "Some Applications of High Speed Rotation."**

Wednesday, May 16th, at 5.30 p.m., at the Institute's House, 47 Belgrave Square, London, S.W.1. **Institute Annual General Meeting.**

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